PROCEEDINGS

OF THE

PHYSICAL SOCIETY

JULY TO DECEMBER 1958

VOLUME 72

Published by
THE PHYSICAL SOCIETY
1 Lowther Gardens, Prince Consort Road,
London S.W. 7

OFFICERS AND COUNCIL 1958–59

PRESIDENT

J. A. Ratcliffe, O.B.E., M.A., F.R.S.

VICE-PRESIDENTS

who have filled the office of President

Sir Frank Smith, G.C.B., G.B.E., D.Sc., LL.D., F.R.S. (1924–26)
Sir Owen Richardson, M.A., D.Sc., F.R.S. (1926–28)
W. H. Eccles, D.Sc., M.I.E.E., F.R.S. (1928–30)
T. Smith, M.A., F.R.S. (1936–38)
Sir Charles Darwin, K.B.E., M.C., M.A., Sc.D., F.R.S. (1941–43)
E. N. da C. Andrade, Ph.D., D.Sc., LL.D., F.R.S. (1943–45)
Sir David Brunt, M.A., Sc.D., F.R.S. (1945–47)
G. I. Finch, M.B.E., D.Sc., F.R.S. (1947–49)
S. Chapman, M.A., D.Sc., F.R.S. (1949–50)
L. F. Bates, D.Sc., Ph.D., F.R.S. (1950–52)
R. Whiddington, C.B.E., M.A., D.Sc., F.R.S. (1952–54)
H. S. W. Massey, B.A., M.Sc., Ph.D., F.R.S. (1954–56)
N. F. Mott, M.A., D.Sc., F.R.S. (1956–58)

VICE-PRESIDENTS

F. Llewellyn Jones, M.A., D.Phil., D.Sc.
K. Mendelssohn, M.A., D.Phil., F.R.S.
R. W. Ditchburn, M.A., B.Sc., Ph.D.
A. J. Philpot, C.B.E., M.A., B.Sc.

HONORARY SECRETARIES

C. G. Wynne, B.A., Ph.D. (*Business*)
H. H. Hopkins, D.Sc. (*Papers*)
A. G. Peacock, B.Sc. (*Exhibition*)

HONORARY FOREIGN SECRETARY

E. N. da C. Andrade, Ph.D., D.Sc., LL.D., F.R.S.

HONORARY TREASURER

D. A. Wright, D.Sc.

HONORARY LIBRARIAN

R. W. B. Pearse, D.Sc., Ph.D.

ORDINARY MEMBERS OF COUNCIL

D. W. Fry, M.Sc.
V. E. Cosslett, M.A., M.Sc., Ph.D.
D. Gabor, Dr.Ing., F.R.S.
J. G. Wilson, M.A., Ph.D.
B. H. Flowers, M.A., D.Sc.
F. C. Frank, O.B.E., B.A., B.Sc., D.Phil., F.R.S.
M. H. L. Pryce, M.A., Ph.D., F.R.S.
E. W. H. Selwyn, B.Sc.
W. E. Burcham, Ph.D., F.R.S.
N. Kemmer, Dr. Phil., M.A., F.R.S.
G. B. B. M. Sutherland, M.A., Ph.D., F.R.S.
W. H. George, M.Sc., Ph.D.

OFFICERS OF THE SPECIALIST GROUPS

COLOUR GROUP

Chairman
J. W. Perry
Honorary Secretary
R. A. Weale, M.Sc., Ph.D.

OPTICAL GROUP

Chairman
W. D. Wright, D.Sc., Ph.D.
Honorary Secretary
W. T. Welford, B.Sc., Ph.D.

LOW TEMPERATURE GROUP

Chairman
P. H. Sykes, M.Sc., Ph.D.
Honorary Secretary
R. W. Powell, Ph.D., D.Sc.

ACOUSTICS GROUP

Chairman
T. Somerville, B.Sc.
Honorary Secretaries
G. G. Parfitt, B.Sc., Ph.D., and
R. W. B. Stephens, B.Sc., Ph.D.

SECRETARY-EDITOR

Miss A. C. Stickland, M.Sc., Ph.D.
1 Lowther Gardens, Prince Consort Road, London, S.W.7
(Telephone : KENsington 0048, 0049)

CONTENTS

Part 1 *July* 1958

PAGE

Mr. R. S. Storey, Mr. W. Jack and Dr. A. Ward. The Fluorescent Decay of CsI(Tl) for Particles of Different Ionization Density 1

Dr. B. D. Saksena. The Infra-Red Absorption Spectra of α-Quartz between 4 and 15 Microns 9

Dr. H. J. Goldsmid. Heat Conduction in Bismuth Telluride. 17

Dr. D. A. Bell. Semiconductor Noise as a Queuing Problem 27

Dr. K. Schröder. Yield Phenomena in Copper–Arsenic Alloys 33

Mr. E. H. Andrews and Mr. A. Walsh. Rupture Propagation in Inhomogeneous Solids: An Electron Microscopic Study of Rubber containing Colloidal Carbon Black 42

Mr. S. K. Kundu. Nucleon Magnetic Moment in Cut-off Meson Theory . . 49

Dr. J. B. Birks and Mr. A. J. W. Cameron. Energy Transfer in Organic Systems. I: Photofluorescence of Terphenyl-toluene Solutions 53

Dr. J. A. Bastin and Prof. R. W. Wright. Heat Treatment of Polycrystalline Cadmium Oxide 65

Dr. G. E. Brown and Dr. C. T. De Dominicis. The Optical Model at Low Energies and Dispersion Theory 70

Dr. G. S. Verma and Dr. S. K. Kor. A Comparative Study of Ultrasonic Absorption in $MnSO_4$ with $MgSO_4$ Solutions 81

Mr. M. S. Bokhari, Mr. J. A. Cookson, Dr. B. Hird and Mr. B. Weesakul. The Polarization of Protons from the $^{12}C(d, p)^{13}C$ Reaction 88

Dr. R. Huby. Time Reversal and the Relation between Angular Distributions of Absorption and Emission Processes 97

Dr. T. B. Grimley. The Molecular Orbital Theory of the Interaction between an Atom and a Crystal Surface 103

Dr. R. J. Bickerton and Dr. H. London. The Scaling Laws for the Stabilized Pinch 116

Dr. R. Marriott. Calculation of the 1s–2s Electron Excitation Cross Section of Hydrogen 121

Research Notes :

Dr. E. W. Lee and Mr. R. C. Jackson. A Semi-empirical Equation for the Initial Susceptibility of Homogeneous Ferromagnetic Alloys 130

Dr. G. D. Archard. An Unconventional Electron Lens 135

Dr. M. F. Culpin and Dr. K. W. Kemp. Calculations of X-ray Intensities for a Model Polycrystalline Material in Simple Extension 137

Dr. B. L. Moiseiwitsch. Elastic Scattering of Slow Positrons by Hydrogen Atoms 139

Mr. E. Holøien. On the $(2p)^2\ ^1S$ State Solution of the Non-relativistic Schrödinger Helium Equation 141

Dr. G. H. Burkhardt, Prof. J. M. Cassels, Miss M. Rigby, Dr. A. M. Wetherell and Dr. J. R. Wormald. Radiative Beta Decay of the Pion . 144

Letters to the Editor:

Dr. B. Andersson. A Re-measurement of two Gamma Ray Lines from ^{152}Eu and ^{154}Eu 148

Reviews of Books. 149

22582

PAGE

Dr. S. N. Biswas. Distribution of K-Mesons produced in High Energy Nuclear Interactions 169

Dr. N. H. March and Mr. W. H. Young. Variational Methods based on the Density Matrix 182

Dr. E. H. Putley and Mr. W. H. Mitchell. The Electrical Conductivity and Hall Effect of Silicon 193

Mr. N. Lynn. A Second Order Calculation of the Energy of Interaction between Two Normal Helium Atoms 201

Dr. D. Gugan and Dr. G. Rowlands. The Pressure Dependence of the Ferromagnetic Anisotropy Energy 207

Dr. J. C. Woolley and Mr. B. A. Smith. Solid Solution in $A^{III}B^{V}$ Compounds . 214

Prof. L. F. Bates, Mr. H. Clow, Mr. D. J. Craik and Mr. P. M. Griffiths. Magnetization Processes in a Polycrystalline Manganese Zinc Ferrite . . 224

Dr. E. W. Lee, Mr. D. R. Callaby and Mr. A. C. Lynch. The Use of the Kerr Effect for studying the Magnetization of a Reflecting Surface . . . 233

Dr. A. Hart. Hysteresis Loops associated with a Simple Domain Structure . 244

Dr. E. W. Lee. Magnetostriction Curves of Polycrystalline Ferromagnetics . 249

Dr. I. S. Hughes and Dr. P. V. March. Photoproduction of π^- Mesons from Boron 259

Research Notes:

Mr. A. Raychaudhuri. An Anisotropic Cosmological Solution in General Relativity 263

Mr. D. Gerlich. Temperature Dependence of Point Contact Injection Ratio in Germanium 264

Mr. N. B. Grover and Dr. E. Harnik. Sweep-out Effects in the Phase Shift Method of Carrier Lifetime Measurements 267

Dr. T. S. Moss and Mr. T. D. H. Hawkins. The Infra-Red Emissivities of Indium Antimonide and Germanium 270

Dr. A. Dalgarno and Dr. A. Williams. The Second Approximation to the Mobilities of Ions in Gases 274

Dr. R. Englman. The Absorptivity of Anisotropic Metals 277

Dr. W. R. Hindmarsh. Pressure Shift and Broadening in the Resonance Line of Calcium 279

Dr. L. Pincherle. A Note on the Cellular Method for Energy Bands in Solids 281

Dr. R. J. Meakins. Theoretical and Experimental Relaxation Times of Solutions 283

Dr. D. T. Stewart and Mr. E. Gabathuler. Some Electron Collision Cross Sections for Nitrogen and Oxygen 287

Dr. A. Ashmore, Dr. A. N. Diddens, Mr. G. B. Huxtable and Dr. K. Skarsvåg. A Measurement of the Spin Correlation Coefficient C_{nn} in p–p Scattering at 382 Mev, for 90° Centre of Mass Scattering Angle 289

Dr. H. B. Gilbody and Dr. J. B. Hasted. Mass Dependence of Inelastic Atomic Collisions. 293

Mr. G. A. Day. Sublimation Nuclei 296

Dr. P. Rice Evans and Mr. N. J. Freeman. The Branching Ratio of Thorium C. 300

Prof. W. Kohn and Mr. S. Michaelson. Properties of Wannier Functions . 301

Mr. R. M. Sillitto and Miss M. D. Wilson. 'Virtual' Fresnel Diffraction Patterns 303

PAGE

Letters to the Editor:

Dr. S. DOMANSKI. The Dependence of the Coercive Field of Tri-Glycine Sulphate on Temperature and Frequency 306

Dr. M. PRUTTON. The Polarization Reversal Process in Ferroelectric Single Crystals 307

Corrigendum: J. M. COWLEY and A. F. MOODIE 309

Reviews of Books 309

Part 3 *September* 1958

Mr. T. R. OPHEL. The Photodisintegration of Potassium by $^{7}Li(p, \gamma)$ Radiation . 321

Dr. E. BARANGER and Dr. E. GERJUOY. Some Consequences of the Compound Ion Model 326

Dr. G. M. GRIFFITHS. The Resonant Absorption of γ-Rays in ^{14}N 337

Prof. L. F. BATES and Dr. M. M. NEWMANN. The Magnetic Susceptibilities of Alloys of Cerium with Thorium. 345

Prof. SYDNEY CHAPMAN. Thermal Diffusion in Ionized Gases 353

Dr. EIFIONYDD JONES and Prof. F. LLEWELLYN JONES. The Experimental Determination of the Primary Ionization Coefficients at Low Gas Pressures . . 363

Dr. R. BULLOUGH, Dr. R. C. NEWMAN and Mr. J. WAKEFIELD. Diffusion across a Semiconductor–Vapour Interface 369

Dr. J. R. DRABBLE. Galvanomagnetic Effects in p-Type Bismuth Telluride . . 380

Dr. R. ENGLMAN. The Transport Theory of Temperature Waves in Insulators . 391

Miss A. E. BOWLEY, Mr. R. DELVES and Dr. H. J. GOLDSMID. Magnetothermal Resistance and Magnetothermoelectric Effects in Bismuth Telluride . . 401

Mr. A. M. GOODBODY. The Influence of Spherical Aberration on the Response Function of an Optical System 411

Dr. R. G. LOASBY. The γ Phase in Uranium Alloys 425

Mr. D. P. JONES, Dr. P. G. MURPHY and Mr. P. L. O'NEILL. Conservation of Parity in a Nuclear Interaction at 350 MeV 429

Dr. E. J. SQUIRES. The Polarization of Neutrons emitted from Nuclei by Protons 433

Dr. J. SCOBIE and Mr. E. GABATHULER. The L/K-Capture Ratio in ^{126}I . . 437

Dr. V. I. LITTLE. The Measurement at Low Frequencies of the Dielectric Constant of Conducting Liquids 441

Dr. H. KOLSKY and Mr. Y. Y. SHI. Fractures Produced by Stress Pulses in Glass-like Solids 447

Research Notes:

Dr. P. M. HU and Prof. R. W. PARSONS. The Viscosity and Density of Benzene near its Freezing Point 454

Dr. N. W. TANNER. The Stripping Mechanism in the Reaction $^{9}Be(\alpha, n)^{12}C$. 457

Mr. E. GRÜNBAUM. The Growth of an Orientated Monolayer of Lead on a Silver Single-Crystal Substrate 459

Prof. W. E. BURCHAM and Miss M. A. F. ALVES. The Ionization produced by Beams of Carbon and Nitrogen Ions 462

Mr. A. RIDDOCH and Mr. J. H. LECK. Positive Ion Emission from Metal Surfaces caused by Ion Bombardment 467

Dr. G. E. BACON and Dr. R. STREET. Gold–Manganese Alloys; Some Preliminary Studies by Neutron Diffraction 470

Reviews of Books 475

PAGE

Dr. B. Hird, Mr. J. A. Cookson and Mr. M. S. Bokhari. Measurement of Polarizations in Stripping Reactions 489

Mr. A. Astbury, Mr. M. A. R. Kemp, Mr. N. H. Lipman, Dr. H. Muirhead, Dr. R. G. P. Voss, Dr. C. Zangger and Mr. A. Kirk. Capture Rates for Negative Muons in Various Elements 494

Dr. J. Dabrowski. On the Binding Energy of the ^{16}O Nucleus: II—Higher Clusters 499

Dr. J. L. Perkin, Mr. L. P. O'Connor and Mr. R. F. Coleman. Radiative Capture Cross Sections for 14·5 Mev Neutrons 505

Dr. A. C. Rose-Innes. Observation by Cyclotron Resonance of the Effect of Strain on Germanium and Silicon 514

Dr. T. J. M. Boyd. Electron Excitation of Atomic Hydrogen in the 2s State . 523

Dr. N. E. Hill. The Application of Onsager's Theory to Dielectric Dispersion . 532

Mr. R. W. R. Hoisington, Dr. L. Kellner and Mr. M. J. Pentz. Criteria Determining the Design and Performance of a Source-modulated Microwave Cavity Spectrometer 537

Mr. I. G. Austin. The Optical Properties of Bismuth Telluride . . . 545

Dr. R. J. Elliott, Dr. T. P. McLean and Dr. G. G. Macfarlane. Theory of the Effect of a Magnetic Field on the Absorption Edge in Semiconductors . . 553

Dr. R. Srinivasan. Elastic Constants of Calcium Fluoride 566

Dr. R. Roscoe. Viscosity Determination by the Oscillating Vessel Method: I—Theoretical Considerations 576

Dr. R. Roscoe and Mr. W. Bainbridge. Viscosity Determination by the Oscillating Vessel Method: II—The Viscosity of Water at 20°c 585

Dr. E. W. Lee and Mr. A. G. H. Troughton. Reversible Permeability and Losses in Magnetically annealed Perminvar 596

Dr. B. Lewis and Dr. R. Street. The Interpretation of Magnetic Susceptibility and the ΔE Effect in Terms of Domain Processes 604

Dr. R. J. Bickerton. The Amplification of a Magnetic Field by a High Current Discharge 618

Dr. W. A. Prowse and Mr. J. L. Clark. Ultra-High-Frequency Gas Breakdown between Rogowski Electrodes 625

Mr. S. Datta Majumdar. Energy Levels of Polyatomic Molecules . . . 635

Dr. G. M. Bell. Dilution Effects in Regular Assemblies 649

M. J. Ch. Viénot. Determination of the Fourier Spectra of Photographic Images 661

Letters to the Editor:

Dr. H. A. Wriedt and Dr. J. C. Swartz: Dr. W. R. Thomas and Dr. G. M. Leak. The Binding Energy of Nitrogen in a Dislocation . . . 673

Corrigenda: Dr. E. W. Emery and Mr. N. Veall; Prof. Sydney Chapman . 675

Reviews of Books 676

PAGE

Dr. S. F. Edwards. The Collective Treatment of a Fermi Gas: I 685

Dr. T. J. M. Boyd and Dr. A. Dalgarno. Charge Transfer of Protons in Excited Atomic Hydrogen 694

Miss V. M. Martin, Dr. M. J. Seaton and Mrs. J. B. G. Wallace. On the use of the Adiabatic Theory in Electron–Atom Collision Calculations . . . 701

Mr. J. V. Champion. Flow Anisotropy in the Theory of Liquids . . . 711

Dr. R. E. Barrington and Dr. J. M. Anderson. The Probability of Multiple Emissions of Secondary Electrons 717

Mr. B. N. C. Agu, Mr. T. A. Burdett and Dr. E. Matsukawa. The Transmission of Electrons through Metallic Foils 727

Dr. R. Mansfield and Mrs. W. Williams. The Electrical Properties of Bismuth Telluride 733

Dr. A. M. MacSwan. The Colour of Thin Oxide Films on Metals 742

Mr. J. A. Macdonald. Apodization and Frequency Response with Incoherent Light 749

Prof. L. F. Bates and Dr. R. G. Loasby. Magnetic Susceptibility and Electrical Resistance Properties of some Uranium Alloys 757

Dr. M. Fox and Dr. R. S. Tebble. The Demagnetizing Energy and Domain Structure of a Uniaxial Single Crystal 765

Dr. B. H. Bransden and Dr. H. H. Robertson. The Elastic Scattering of Protons by Tritons and ^{3}He 770

Prof. J. M. Cassels, Mr. T. W. O'Keeffe, Miss M. Rigby and Dr. J. R. Wormald. Energy Dependence of the Spatial Asymmetry in Polarized Muon Decay . 781

Mr. S. J. B. Corrigan and Dr. A. von Engel. The Excitation of Helium by Electrons of Low Energy 786

Dr. I. J. Lawrenson and Dr. F. A. Rushworth. Nuclear Magnetic Resonance in Solid *Cyclo*pentene 791

Dr. A. C. Chapman and Dr. E. F. W. Seymour. Copper Nuclear Magnetic Resonance in Cu–Ni and Cu–Mn Alloys 797

Dr. M. A. E. Nutkins. Theory of Phase Transformations in Alkali Metals . 810

Dr. W. G. Townsend and Dr. G. C. Williams. The Electrical Breakdown of Gases in Uniform High Frequency Fields at Low Pressure 823

Mr. P. A. Allinson and Prof. E. G. Richardson. The Propagation of Ultrasonics in Suspensions of Liquid Globules in another Liquid 833

Dr. M. Redwood. The Generation of Secondary Signals in the Propagation of Ultrasonic Waves in Bounded Solids 841

Dr. D. Stansfield. The Surface Tensions of Liquid Argon and Nitrogen . 854

Dr. J. C. Woolley and Mr. B. A. Smith. Solid Solution in Zinc Blende Type $A_2^{III}B_3^{VI}$ Compounds 867

Dr. L. C. Biedenharn and Dr. H. B. Willard. Eigenphaseshifts in terms of Wigner's Nuclear Reaction Theory 874

Mr. P. Palit and Dr. E. H. Bellamy. The Photoproduction of π^0 Mesons at Helium 880

Research Notes:

Dr. G. H. A. Cole. Determination of Fluid Molecular Order 887

Dr. A. Dalgarno. The Polarization of Helium-like Atoms 889

Dr. P. S. Farago. Proposed Method for Direct Measurement of the g-Factor of Free Electrons 891

Mr. W. R. Hogg and Dr. E. H. Bellamy. The Photoproduction of Charged Pions from Deuterium 895

PAGE

Dr. N. Cusack and Mr. P. Kendall. The Absolute Scale of Thermoelectric Power at High Temperature 898

Dr. R. S. Longhurst. Diffraction by an Opaque Strip 901

Dr. O. S. Heavens and Dr. J. C. Kelly. Refractive Index of Non-uniform Films 906

Dr. E. R. Pike and Prof. A. J. C. Wilson. Effect of Lorentz Factor and Dispersion on Measurement of Lattice Parameters with Powder Cameras . 908

Mr. J. R. A. Beale, Mr. D. E. Thomas and Mr. T. B. Watkins. A Method of studying Surface Barrier Height Changes on Transistors. 910

Dr. F. A. Johnson and Dr. J. M. Lock. The Vibrational Spectrum and Specific Heat of Germanium 914

Dr. E. H. Putley. The Temperature Variation of the Concentration of Impurity Carriers in Silicon 917

Dr. E. G. S. Paige. Experimental Determination of Electron Temperature in High Electric Fields applied to Germanium 921

Letters to the Editor:

Prof. A. J. C. Wilson. Effect of Absorption on Mean Wavelength of X-ray Emission Lines 924

Prof. G. F. J. Garlick, Mr. J. M. Hough, and Mr. R. A. Fatehally. The Nature of Binding in Cadmium Telluride 925

Reviews of Books 927

Mr. K. Barron and Dr. L. E. Lawley. Absorption of Sound in Sediments of Small Particles in Liquids 933

Mr. P. D. Edmonds and Dr. J. Lamb. Vibrational Relaxation Times of a Number of Polyatomic Gases derived from Measurements of Acoustic Absorption . 940

Dr. P. R. Evans, Mr. N. J. Freeman, Mr. G. K. McGinty, Mr. B. H. Armitage and Prof. H. O. W. Richardson. A Prolate Spheroidal Field Magnetic Spectrometer with Source near the Equatorial Plane 949

Prof. E. R. Andrew and Dr. R. A. Newing. The Narrowing of Nuclear Magnetic Resonance Spectra by Molecular Rotation in Solids 959

Dr. M. R. Bhiday, Dr. R. E. Jennings and Dr. P. I. P. Kalmus. Measurement of Electron Beam Energy using a Gas Čerenkov Detector 973

Dr. J. S. Hey and Dr. T. B. A. Senior. Electromagnetic Scattering by Thin Conducting Plates at Glancing Incidence 981

Dr. F. García-Moliner. Magnetoresistance and Fermi Surface of Alkali Metals 996

Mr. A. Duncanson and Dr. R. W. H. Stevenson. Some Properties of Magnesium Fluoride crystallized from the Melt 1001

Dr. A. H. Benny and Mr. F. D. Morten. The Measurement of Surface Recombination Velocity on Silicon 1007

Dr. D. Gugan. The Change of Spontaneous Magnetization with Hydrostatic Pressure 1013

Prof. K. W. H. Stevens. The Wave Mechanical Damped Harmonic Oscillator 1027

Dr. L. Mandel. Fluctuations of Photon Beams and their Correlations . . 1037

Dr. W. D. Corner and Mr. F. Hutchinson. The Saturation Magnetostriction of Nickel Crystals at Low Temperatures 1049

Dr. A. Dalgarno and Mr. A. E. Kingston. Properties of the Metastable Helium Atoms 1053

PAGE

Dr. D. K. Davies, Dr. J. Dutton and Prof. F. Llewellyn Jones. Secondary Ionization Processes in Hydrogen at High Gas Pressures 1061

Dr. I. G. Matthews. The Fluorescence of Diamonds Excited by X-Rays . 1074

Mr. B. A. Tozer, Dr. R. Thorburn and Prof. J. D. Craggs. The Attachment of Slow Electrons in Air and Oxygen 1081

Mr. M. R. C. McDowell. Elastic Scattering of Slow Ions in their Parent Gases 1087

Dr. C. Broude, Dr. L. L. Green and Dr. J. C. Willmott. The Energy Levels of ^{31}P: I—γ-ray Spectra and Decay Schemes 1097

Dr. C. Broude, Dr. L. L. Green and Dr. J. C. Willmott. The Energy Levels of ^{31}P: II—Angular Distributions and Correlations 1115

Dr. C. Broude, Dr. L. L. Green and Dr. J. C. Willmott. The Energy Levels of ^{31}P: III—Comparison with the Nilsson Model 1122

Mr. C. J. Batty and Dr. S. J. Goldsack. Double Scattering Experiments with 970 Mev Protons 1130

Research Notes:

Dr. G. E. Brown, Dr. L. R. B. Elton, and Dr. F. Mandl. Polarization of μ-Mesons Scattered by Mercury 1137

Dr. H. N. V. Temperley. On the Enumeration of Mayer Cluster Integrals . 1141

Mr. Z. Pająk and Mr. J. Stankowski. Polarization Changes during the Process of Ageing in Ferroelectrics of the $BaTiO_3$-Type . . . 1144

Prof. W. Kohn. Theory of Bloch Electrons in a Magnetic Field . . 1147

Letters to the Editor:

International Union of Pure and Applied Physics 1151

Reviews of Books 1153

Subject Index, Vol. 72. 1157

Index of Authors (with Titles), Vol. 72 1163

Index to Reviews of Books, Vol. 72 1173